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SPRUCE WEEVIL - CLAPSOP COUNTY

Crown Zellerbach Tree Farm
Aug. 30 - Sept. 1, 1948

Contact was made with Charles Wood at Seaside, Monday, Aug. 30, to evaluate the damage caused by the spruce weevil, Pissodes sitchensis, on Sitka spruce plantations.

Most of the plantations are from plantings made in 1930 and 1933. Hemlock, and occasionally a few other species, are found in mixture with the spruce. Stocking is heavy and generally complete on the areas.

As observed from the roadsides, the weeviled trees are numerous and badly deformed. The study made at this time was to determine the actual effect on the trees. It was considered important to determine the evidence of attack, percent of attacked trees, and the number of times the insect had made entrance during the life of the tree. Some information concerning the biology of the insect was also sought.

Chuck Woods and George Johnson, foresters, and Merle Moser, assistant, had established a five acre plot to determine growth, weevil damage and other silvicultural knowledge this plot offers a good area for extensive and intensive weevil study. Trees have been limbed to facilitate passage through the area and all boundaries are well marked.

Examination of the plot and the information obtained was conducted to determine the application to a weevil study.

Much of the information obtained by Woods can be used and with the addition of two or more factors decided on at this time, an evaluation of damage should be forthcoming.

Sixty-four trees on the existing plot were examined closely by Merle Moser and myself. Of the number checked, all but two had been weeviled at least once during their lifetime. Some trees had been weeviled as many as six times during the life span of 18 years.

From this examination it was concluded, and very evident, that the weeviling is not nearly as damaging to the Close-grown trees as to those observed along the road. Very little deformation is evident on these trees and height growth seems to have suffered but slightly. It seemed evident that the deformity of the trees was directly proportional to the number and position in the stand of the competing trees immediately adjacent to the trees studied.

Several areas of natural regeneration in the Necanicum River drainage were observed as well as some small planted locations.

A stand of approximately eight years of age had been attacked only occasionally to help confirm the assumption that only trees of eight to twenty-five years are seriously attacked. Two large open-grown trees of 25 years age had been weeviled in 1948.

Several leaders were cut and examined to determine the status and number of 1948 brood. From a total of 10 leaders examined, an average of 42 larvae were found in each stem.

Parasites are numerous and many of the weevil larvae have been completely eaten in the pupal cells, often only the head capsule could be found.

Perhaps 15% of the brood do not mature as adult weevils from this factor.

All stages of the insect were found except the egg, although larvae far outnumber the pupae and adults at this time.

Conclusion:

From observations made at this time, it seems logical to expect the weeviling to drop sharply, especially on the plantations that are 20 years old and over.

Weeviling is not as damaging as appearances indicate on open grown trees along roads. If competition is sufficient, the trees recover remarkably well and little deformity is incurred. Much of this plantation is stocked to 1500 trees, or more, per acre, and is recovering well.

Comparison of heights and D.B.H.'S from information obtained by Crown's foresters on the newly-installed plot will indicate the effect of the weeviling. These figures should be obtained and compiled with our own data.

If possible, several of the 1948 leaders brought in will be caged and rearing will be conducted to determine percent of parasitism and number of adults reaching maturity.